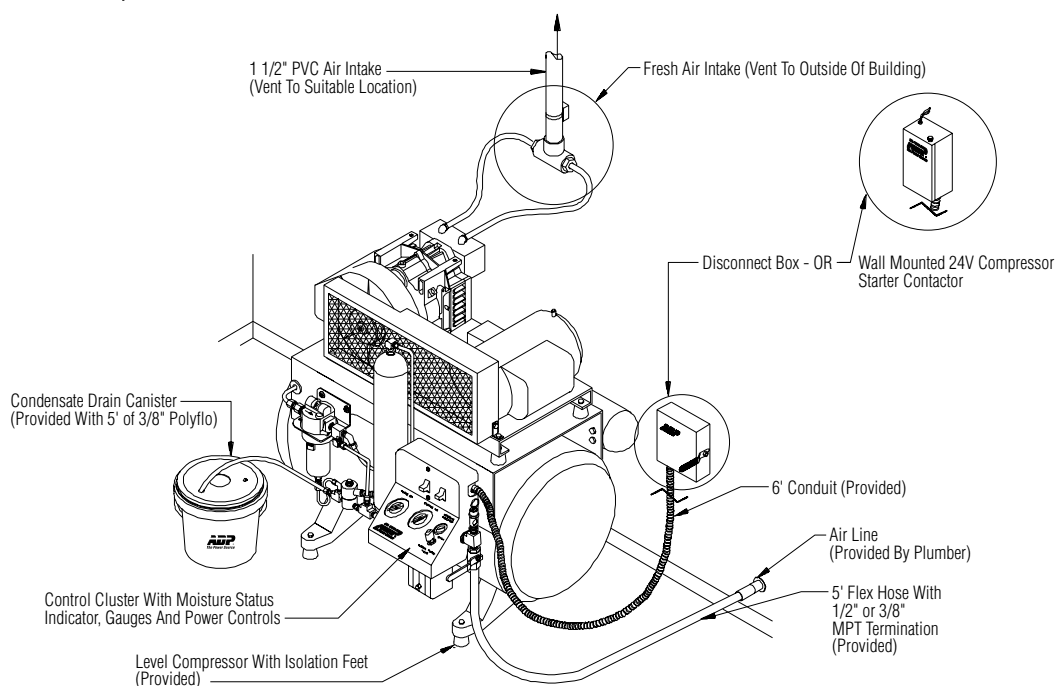


# Maintenance & Troubleshooting

## OS52D - Scroll Air Compressor



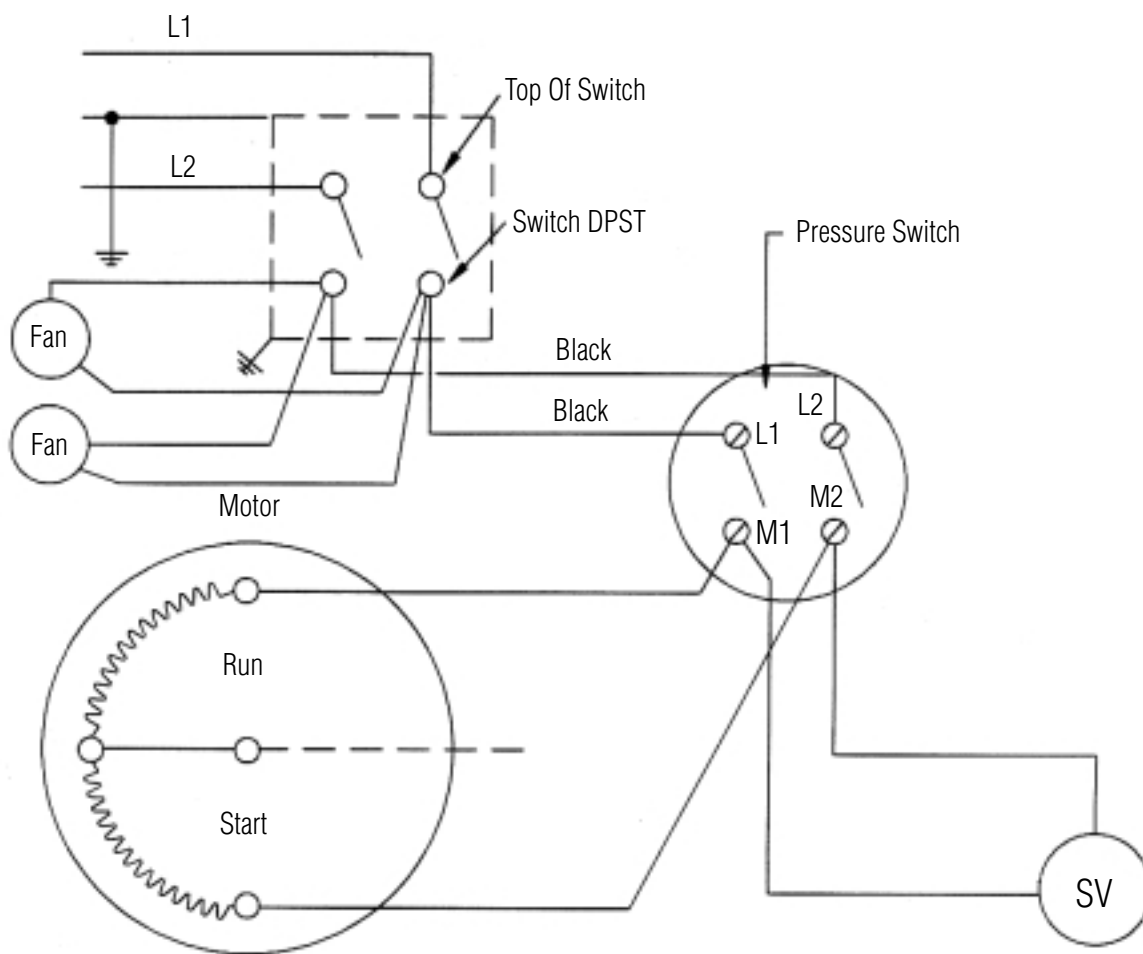
### Description:

Apollo Dental Products Air Compressors are designed to give years of trouble-free, reliable service. However, certain components do require periodic attention and service. Failure to adequately service these components will not only cause failure of the compressor, but will also result in unsatisfactory service while it is running. If you require additional information contact, ADP Technical Support between the hours of 6:00 a.m. and 4:00 p.m. (Pacific Standard Time).

ITEM	INSPECTION	SCHEDULE CALENDAR				
		Weekly	Monthly	Annually		
Moisture Indicator	Confirm Blue	I				
Condensate Drain	Empty As Needed	I				
Pump-Up Time	Confirm Time (35-40 Sec.)		I			
Ultrair Element	Replace If Red		I			R
HOUR METER LOCATED AT PRESSURE SWITCH		SCHEDULE HOURS				
		500	2,500	5,000	10,000	20,000
Intake Filter	Clean/Replace	I	R			
Blower Fan	Clean			I		
Fan Duct	Clean			I		
Compressor Fins	Clean			I		
Motor	Grease			R		
Compressor	Grease			R	R	
Tip Seal	Replace				R	
Dust Seal	Replace		I		R	
V-Belt	Inspect/Replace	Readjust	I		R	
Compressor	Overhaul (Consult ADP)				I	R Consult ADP

I = Inspection R = Replace

**FIGURE 1 - Electrical Wiring Diagram**



**Compressor Pump-Up Chart**

**Desiccant Compressor Model**

Compressor Model	Compressor Pump-Up Time 80-100 PSI
AOCOS52D	35-40 Seconds

**Maintenance:**

**Coalescing Filter Element Replacement**

1. Turn compressor "OFF".
2. To remove bowl, holding tab down, twist and pull down.
3. Replace element.
4. Re-attach bowl.

**Intake Filter**

1. Turn power "OFF".
2. Remove the air inlet housing, the wing nut, and the inlet filter element.
3. Clean the inlet filter element with compressed air or replace with part number PFM50950.

**NOTE: Never clean filter element with solvents or water.**

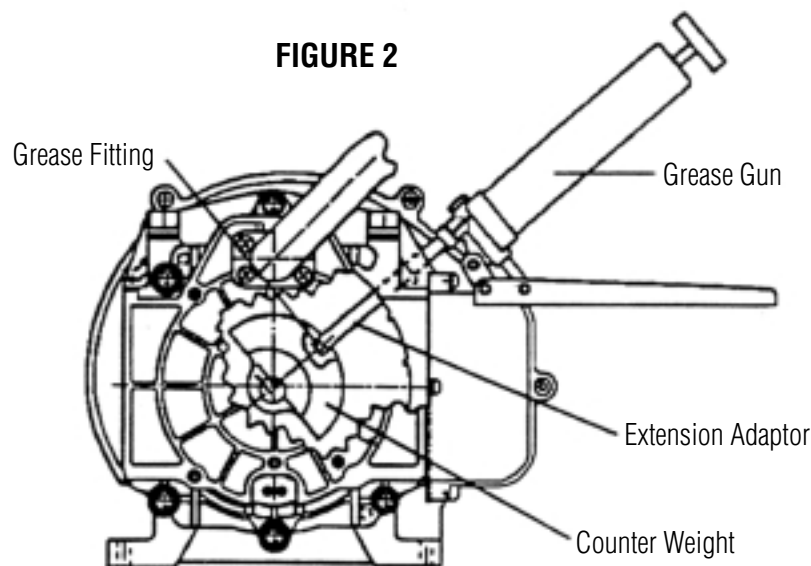
4. Clean the six plastic intake tubes with soap and water.

**Inspect V-Belt Tension**

1. Turn power "OFF".
2. Remove belt guard.
3. Check V-Belt tension with tension gauge.
4. Adjust to 1/2" deflection (max. range).

**Grease Compressor Bearings (Every 5,000 Hours)**

1. Turn power "OFF".
2. Remove one of the two plastic duct caps (See Figure 2).
3. Move the compressor pulley until the grease fitting is visible through the dust cap hole.
4. Use a grease gun, part number HPA30530 extension adaptor, to engage the grease fitting and supply the proper volume of grease as indicated on the grease delivery chart (See Chart 1).



**CAUTION!**

Use only ADP genuine grease (Part #RSS40645) or equivalent. Pump grease gun before feeding to eliminate air from grease passage of the needle adaptor.

**Maintenance (Continued):**

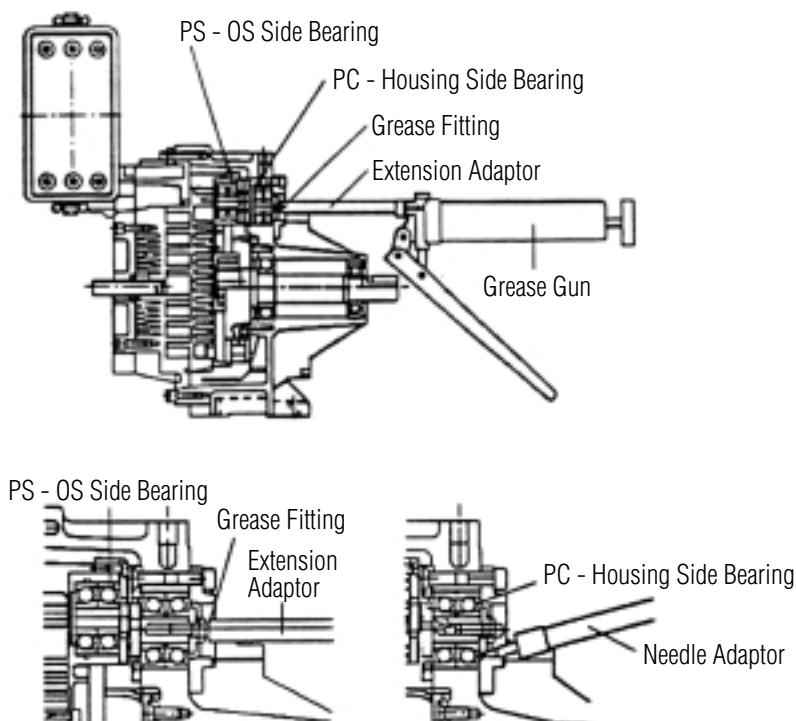
**Grease Pin Crank Bearing**

1. Turn compressor "OFF".
2. Remove the belt guard.
3. Remove the V-Belt and the fan cover.
4. Remove the pulley with a gear puller.
5. Remove the fan duct.
6. Remove the three grease caps. Do not attempt to loosen or tighten the bolt.
7. Grease all three pin crank bearings (See Figure 3).

**CAUTION!**

The grease fitting, located in the center of the pin crank bearing, feeds only the orbit scroll side bearing. Use a needle to supply grease to the housing side bearing. Pump grease gun before feeding to eliminate air from grease passage of the needle adaptor. Hold grease gun for 5-10 seconds after feeding to prevent grease blowback from the grease fitting.

**FIGURE 3**



**CHART 2 - Grease Delivery Chart**

Bearing	1st 5,000 Hours	OS52D	2nd 5,000 Hours
O.S. Bearing	5 Times		3 Times
Pin Crank Bearing O.S. Side	5 Times		3 Times
Pin Crank Bearing Housing Side	5 Times		3 Times

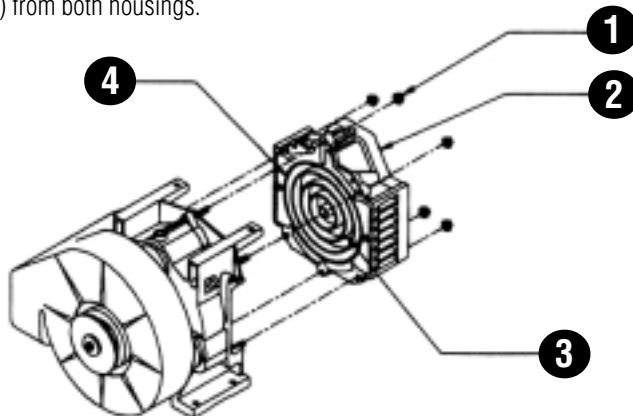
**CAUTION!**

Use only ADP genuine grease Part #RSS40645.

## Maintenance (Continued):

### Replace Tip Seal

1. Turn compressor "OFF".
2. Remove discharge line and discharge manifold fittings (See Figure 4).
3. Remove the middle fan duct screw.
4. Remove the six scroll housing nuts (#1).
5. Remove the stationary scroll housing (#2).
6. Take out the old tip seal (#3) from the orbiting scroll housing and stationary scroll housing.
7. Remove the old dust seals (#4) from both housings.



### Install The New Tip Seals And Dust Seals

1. Blow off any dust from both scroll housing.
2. Install the high pressure, or shorter tip seal, from the center of the scroll and extend the tip seal outward in the seal channel.

**NOTE: The side and bottom lip notches face inward and down into the channel.**

3. Install the low pressure, or longer tip seal, in the same way, but make sure there is no gap between the high and low pressure seals.

**NOTE: The indentations are machined into seal channel to prevent the low pressure seal from moving.**

### CAUTION!

Do not attempt to remove the orbit scroll from the housing.

After installing half of the low pressure seal, carefully remove the seal from the channel and make sure the seal is properly locking onto the channel indentations located just past the high pressure seal

4. Blow off any dust caused by removing the seal from the seal channel.
5. Install the low pressure seal completely. Make sure the side and bottom lip notches are facing inward and down into the seal channel.

**NOTE: The lip notches must not be distorted in the seal or torn off.**

6. Install backup tube in the dust seal channel.
7. Place dust seal (#4) over the backup tube.

### CAUTION!

The backup tube must meet at the bottom of the housing in the six o' clock position. The dust seal must meet on the right side of the housing, or in the three o' clock position.

8. Install the stationary scroll housing onto the orbiting scroll housing and reassemble the unit.
9. Make sure when reassembling the unit, the pulley belt and the housing nut follow the specification as detailed below.

### Torque Specifications

Model	Pulley Belt		Housing Nut	
	Size	Torque	Size	Torque
OS52D	M8	175 in.-lbs.	M8	175 in.-lbs.

**PROBLEM: Compressor will not start.**

**Cause:** No power at motor terminals.

**Remedy:** Check for voltage at wall outlet. If proper voltage is measured there and not at motor terminals, check for:

1. Broken or loose wire.
2. Pressure switch defective or out of adjustment (contacts should be closed if tank pressure is below 80 PSI).
3. Defective "ON/OFF" switch (DPST), replace.

**Cause:** Defective capacitor. Motor may hum but not start.

**Remedy:** 1. Short capacitor lead terminals and test capacitor using Ohmmeter, checking for resistance rise. If there is no resistance rise, capacitor is defective and must be replaced.

**Cause:** Frozen motor / compressor.

**Remedy:** 1. Turn "OFF" electrical power. Check to see if belt will rotate by hand. If not, remove belt to determine which of the two motor head is locked up. Replace locked up motor or head. Contact ADP for Return Authorization on any part under warranty.

**PROBLEM: Motor runs for only a few seconds or "chugs".**

**Cause:** Low voltage.

**Remedy:** 1. Check line voltage. It should be at least 215 volt (230 volt units) when compressor is running. Install ADP trans former if necessary.

**Cause:** Blockage in air line.

**Remedy:** 1. Remove discharge line flex hose from head and test run. If unit runs correctly, check for obstruction in air line to storage tank. It most likely would be at an orifice or other restriction.

**PROBLEM: Compressor head runs but will not pressurize to 100 PSI.**

**Cause:** Quick exhaust valve, pressure switch unloader valve or coalescing float assembly not closing when compressor runs.

**Remedy:** 1. Quick exhaust valve, pressure switch unloader valve or coalescing float assembly may be dirty or defective. Clean or replace.

**Cause:** Clogged air intake filter-muffler.

**Remedy:** 1. Check for excessive dirt/dust accumulation. Clean or replace.

**Cause:** Air leaks in system piping.

**Remedy:** 1. Check for leaks using soapy water solution. Repair any system piping air leaks.

**Cause:** Blockage in air line.

**Remedy:** 1. Inspect all air lines for restrictions.

**Cause:** Leak in compressor unit.

**Remedy:** 1. Close the storage tank shut-off valve. With compressor running, check discharge line flex hose, pressure safety valve tank drain valve and all fittings for leaks using soapy water solution.

**Cause:** Insufficient discharge.

**Remedy:** 1. Check for broken belt.

**PROBLEM: Compressor cycles with no air being used.**

**Cause:** Leak in office air system.

**Remedy:** 1. Close the storage tank shut-off valve. Pump up storage tank to 100 PSI. If pressure is maintained to 100 PSI for 15 or 20 minutes, leak is in air system not in compressor.

**Cause:** Leak in compressor.

**Remedy:** 1. Storage tank check valve may be dirty or defective. Clean or replace.  
2. Check for leaks at storage tank shut-off valve, pressure safety valve tank drain valve and all fittings attached to storage tank, using soapy water solution.

**PROBLEM: Moisture indicator is pink.**

**Cause:** Unloading system not functioning properly.

**Remedy:** 1. Check to see that quick exhaust valve closes when the compressor is pumping. Remove the exhaust muffler to determine this.  
2. Ensure that the quick exhaust valve and the pressure switch unloader valve opens as soon as the compressor stops. The purge tank gauge pressure should drop from 100 PSI to Zero.  
3. If quick exhaust valve is suspected of malfunctioning, visually check for:  
A) Leaking or dirty quick exhaust valve.  
B) Pressure switch unloader operation, adjust unloader tap screw if necessary.  
C) Clogged exhaust muffler.  
4. Check for saturated coalescing element and ensure that float is seating.

**Cause:** Saturated Desiccant Drying Chamber.

**Remedy:** 1. Operate drying system in the manual purge mode. If after 1 week the system is not dry, replace the silica gel (desiccant).

**Cause:** Compressor running too frequently.

**Remedy:** 1. Compressor undersized for installation. Check with ADP Air Systems Technical Support  
2. Leaks in air system. Locate and repair.

### COMPRESSOR PARTS LIST

Description	Part Number
Assembly, Compressor Head	HPH30505
Duct, Fan	HPA30515
Fan - Compressor, Counter-Clockwise	HPA30520
Filter, Air Intake	PFM50950
Grease	RSS40645
Grease Gun	HPA30530
Kit, Tip Seals	HPA30505
Motor	HFM30500
Mounts, Motor / Compressor Platform	MRP70980
Shroud, Fan	HPA30510

### COMPRESSOR REPLACEMENT PARTS

Description	Part Number
Assembly, Dryer Tank	ACA85308
Assembly, Ultrair	ACA85215
Canister, Condensate Drain	SPA95400
Element, Ultrair	PFM85210
Fan - Cooling 230 Volt	EMS10305
Feet, Rubber	MRP70967
Filter, Dryer Tank	PFM70300
Gauge, Air Pressure	PGA70400
Hose, Flex 12"	PCH50200
Kit, Desiccant Replacement	ACA85345
Kit, Moisture Indicator	ACA85965
Switch, ON - OFF	ECS10417
Switch, Pressure	ECS10450
Valve, Ball 3/8"	PVV50500
Valve, Check 3/8"	PVV50515
Valve, Drain	PVV50525
Valve, Manual Purge	PVV50550
Valve, Pressure Safety 125 PSI	PVV50560
Valve, Quick Exhaust (Solenoid)	PVV70502

### Warranty Information: 3 Years

All ADP units are thoroughly inspected and tested in accordance with rigid specifications and standards. Our products are guaranteed against any defective material and workmanship from the date of shipment; provided, that the installation, operation, and maintenance is done in accordance with ADP procedures as outlined in our Installation and Maintenance Guides. Warranty cards must be returned to ADP within ten days of installation to effect warranty. No other warranties or guarantees, expressed or implied are made.

ADP's obligation under the warranty is to provide parts for the repair or, at its option, to provide the replacement product (excluding labor). All special, incidental and/or consequential damages are excluded. We will not issue credit for complete air compressors or vacuum systems without first attempting to correct the problem in the field. Written notice of breach of warranty must be given to ADP within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilizing chemicals and processes. Failure to follow instructions provided in ADP's Installation and Maintenance Guides may void the warranty.